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CO-ORDINATION OF LATIN WITH THE OTHER SUBJECTS OF THE HIGH-SCHOOL CURRICULUM[1]

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This paper[2] discusses the co-ordination of Latin with physics. Although vocabulary furnishes a common bond of great value between physics and Latin, it is doubtful whether at present Latin pupils as a rule use their knowledge constantly and accurately in the physics classroom. Physics teachers are handicapped by their lack of definite knowledge in a given case as to whether the Latin word has actually occurred in the Latin course, and Latin teachers have not, in their work on derivatives, known exactly what words it would be desirable to emphasize. The accompanying list solves both problems and is arranged as follows: The important technical words occurring in physics are printed alphabetically and are followed by the Latin words from which they are derived. With the latter are given the meanings, in many cases together with secondary meanings which will help to show the exact force of the derived word. Finally exact references are given where these Latin words or allied words occur in the Latin text. The Cicero text is made the basis, for in general pupils are either studying physics contemporaneously with Cicero or are expecting to study it the following year. Words not occurring in Cicero or occurring in more convenient form in Caesar or Vergil are assigned to these texts.

The method of procedure is as follows:

1. Every word in the accompanying list is called up in the previous or contemporary Latin classes. Each teacher is provided with copies of the list and with textbooks in which are written at the various points in the text the words to be discussed.

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[1] The supplement to Paper II on grammatical terminology will appear later.

[2] This paper has been written with the co-operation of Mr. Charles S. Harris, head of the Department of Physics. Credit is also due to Miss Sarah Schwendler for assistance in selecting the word-list.

2. In each class in physics pupils are provided with copies of the list. They are held responsible for the mastery of the list as part of their work in physics and the instructors in physics review the work of the Latin instructors by asking for the derivation of all these words as they arise in the physics textbook or classroom. The list is thus covered in its entirety at least twice. Meetings are held occasionally of the Cicero and physics teachers and readjustments and revisions made.

This co-ordination is valuable for several reasons:

1. The pupil receives a definite opportunity to use his Latin, and the particular Latin words used are fixed in his mind more securely.

2. The pupil is given material assistance in the mastery of physics. Having once clearly understood the source of the English word, he will not be so likely to forget its meaning, and in any case he will always be able to reconstruct it for himself. The head of the Physics Department has repeatedly affirmed the value of this co-ordination as he observed it in his classes.

3. More important than either of these is the habit thereby inculcated in the pupil of looking for opportunities to use the knowledge of his Latin classroom in every other classroom which he enters, of expecting to be held responsible in every classroom for facts learned in any other. The process of welding the several units of his curriculum into a consistent whole thus receives a powerful impulse.

4. Incidentally the desire of the pupil and of the parent to see some "practical" value in the study of Latin is satisfied. For when to the co-ordination of Latin with English and physics is added co-ordination with all of the sciences and languages and histories, the question, What practical use is Latin? receives a very tangible answer. I should be the last to rest the case for the study of Latin upon these purely "practical" grounds, but in view of the attitude so prevalent today of demanding tangible results it cannot but be an important outer defense to be able to point with the utmost definiteness to a large total of specific "tangible results."

5. Incidentally also the teachers of other subjects will be reawakened to the value of a knowledge of Latin in the mastery

of their subjects. Pupils also will be able to see by contrast the advantage possessed in the physics classroom and elsewhere by those who study Latin. Now it is just these elements that are necessary to strengthen the position of Latin in our schools. When teachers of Latin discuss its value, their words are naturally regarded as more or less prejudiced, but when the argument comes through teachers of other subjects and through the pupils themselves, conviction inevitably follows. In proportion as we can get the pupils and the teachers of other subjects to realize and act upon the realization that Latin is a carpet covering the floor of every other classroom, in that proportion will Latin fight its own battle.

ENGLISH WORDS USED TECHNICALLY IN PHYSICS WHICH ARE DERIVED FROM LATIN

English Word	Derivation	Occurrence
aberration	*ab*+*errare*=wander from	Cat. ii. 6
acceleration	*ad*+*celerare*=to hasten to	Ver. i. 357
	celeriter=quickly	Cat. iii. 7
adhesion	*ad*+*haerere*=to stick to	Cat. i. 13
alternater	*alternare*=to act alternately, i.e., first one way, then another	Ver. iv. 287
	alter=another	Cat. ii. 19
aperture	*aperire*=to open	Cat. i. 3
arc	*arcus*=bow	Ver. i. 187
armature	*armatura*=armor	Caes. ii. 10
	armare=to arm	Cat. i. 24
caloric	*calor*=heat	Ver. iii. 308
calorimetry	*calor*+*metrum*=heat+measure	Ver. iii. 308
capillarity	*capillaris*=pertaining to hair	
	capillus=hair	Cat. ii. 22
centigrade	*centum*=hundred	Caes. i. 31
	+*gradus*=step, degree	Cat. i. 28
centrifugal	*centrum*=the center	
	+*fugere*=to flee	Cat. i. 11
centripetal	+*petere*=to seek	Cat. i. 11
cohesion	*co* (*con*)+*haerere*=to stick together	Pomp. 19
combustion	*con*+*burere*=to burn up	Caes. i. 5
concave	*con*+*cavus*=hollow	Ver. i. 81
concentric	*con*+*centrum*=having common center	
concurrent	*con*+*currere*=to run together	Ver. i. 493
conduction	*con*+*ducere*=to bring together	Caes. 1. 4
conjugate foci	*conjungere*=to join together	Cat. i. 11
	focus=hearth (i.e., source of rays)	Cat. iv. 18
conservation	*con*+*servare*=to save thoroughly	Cat. i. 7

English	Derivation	Occurrence
constant	*con*+*stare* = to stand permanently	Cat. iii. 14
convection	*con*+*vehere* = to draw together	Ver. 1. 113
convex	*convexus* (*vehere*) = to draw together (i.e., vaulted, rounded)	Ver. i. 310
density	*densus* = thick	Caes. ii. 22
dispersion	*dis*+*spargere* = to scatter apart	Pomp. 22
diffusion	*dis*+*fundere* = to pour apart	Ver. i. 319
emergent	*e*+*mergere* = to come forth	Cat. ii. 21
equilibrium	*aequus* = equal	Cat. i. 20
	librare = to balance	Ver. v. 479
equilibrant	same	
equivalence	+*valere* = to be worth equally	Cat. i. 18
evaporate	*e*+*vapor* = out+steam	Ver. v. 683
exhaust	*exhaurire* = to drain off	Cat. i. 12 Cat. ii. 7
filament	*filum* = thread	Ver. vi. 30
fluid	*fluere* = to flow	Caes. i. 6
fulcrum	*fulcire* = to support	Ver. iv. 247
	fulcrum = a means of support	Ver. vi. 604
gravitation (gravity)	*gravitas* (*gravis*) = heaviness	Cat. i. 3
humidity	*humidus* = moist	Ver. ii. 8
illuminate	*in*+*lumere* = to be light in	Cat. iii. 24
impact	*in*+*pangere* = to dash against	Ver. v. 805
incandescent	*incandescere* = to become white	Ver. iii. 573
incidence	*in*+*cadere* = to fall upon	Cat. ii. 20
induction	*in*+*ducere* = to lead in or on	Cat. i. 22
inertia	*iners* = sluggish	Cat. ii. 10
insulate	*insula* = island	Pomp. 32
interrupter	*inter*+*rumpere* = to break in between	Ver. iv. 88
liquified	*liquere* = to be liquid	Cat. iii. 19
luminous	*luminous* = full of light	Cat. iii. 24
mercury	*Mercurius* = god of travelers, commerce, etc. (hence of lively and mobile disposition)	Ver. iv. 222
molecule	*moles*+*culus* = little mass	Cat. i. 23
momentum	*movere* = to move	Cat. i. 1
motor	*movere*+*tor* = to move+agent	Cat. i. 1
opaque	*opacus* = dark	Ver. iii. 508
pendulum	*pendere* = to hang	Ver. i. 106
penumbra	*paene* = almost	Cat. ii. 12
	umbra = shadow	Ver. i. 165
pigment	*pingere* = to paint	Ver. i. 708
potential	*potens* = having power	Pomp. 4
pressure	*premere* = to press hard	Cat. ii. 19
radiation	*radius* = ray, spoke	Ver. iv. 119
reflect	*re*+*flectere* = to bend back	Ver. ii. 741
refraction	*re*+*frangere* = to break back	Cat. i. 22
regelation	*re*+*gelare* = to freeze again	
	gelidus, *gelu* = cold, ice	Cat. i. 31

English	Derivation	Occurrence
residual	*re*+*sidere*=to sit back (settle down)	Cat. i. 12
resolution	*re*+*solvere*=to loosen, disentangle	Ver. ii. 157
resonance	*re*+*sonare*=to sound back	Ver. iii. 432
resultant	*resultare*=to leap back	Ver. v. 150
science	*scire*=to know	Cat. i. 15
solution	*solvere*=to loosen, release	Pomp. 62
specific	*species*=kind	Cat. ii. 18
	+*facere*=to make (i.e., to make definite)	Cat. i. 2
spectrum	*spectrum*=image	Cat. i. 17
stability	*stare*+*bilis*=able to stand	Ver. i. 73
superposition	*super*+*ponere*=to place above	Cat. ii. 14
tenacity	*tenax* (*tenere*)=capable of holding	Ver. iv. 188
tension	*tendere*=to stretch	Cat. iv. 18
translucent	*trans*+*lucere*=to shine through	Ver. v. 554
	lux=light	Cat. i. 6
transmission	*trans*+*mittere*=to send across	Pomp. 1
transparent	*trans*+*parere*=to appear through	Ver. i. 118
umbra	*umbra*=shadow	Ver. i. 165
vaporization	*vapor*=steam	Ver. v. 683
velocity	*velox*=swift	Caes. i. 48 Ver. iv. 174
vertical	*vertex*=point	Ver. i. 114
vibratory	*vibrare*=to move to and fro	Cat. ii. 23
visual	*videre*=to see	Cat. i. 1
volatile	*volare*=to fly	Ver. i. 150
vulcanize	*Vulcanus*=god of fire	Ver. ii. 311